

WHAT IS CLAIMED IS:

1. A method of harvesting components from a sample material, said method comprising the steps of:
 - providing a sample material in a sampling container, said sampling container having a focusing device with a passage for receiving and elongating layers of sample components to be harvested from said sample,
 - providing at least one antibody in said sampling container, and mixing said antibody with said sample, wherein said antibody has an affinity for binding with at least one substance in said sample, and
 - centrifuging said container and sample at sufficient G forces to separate components of said sample and to force a target component from said sample into said passage.
2. The method of claim 1, further comprising the step of removing said target component from said passage.
3. The method of claim 1, wherein said focusing device is a float received in said container and having a dimension and shape complementing an interior of said container, said float including ribs defining a longitudinal channel between said float and said container for receiving and elongating said target component during centrifuging.
4. The method of claim 3, further comprising a particulate carrier, wherein said antibody is bound to said particulate carrier and has an affinity for capturing said target component, said method comprising centrifuging said container for sufficient time and at a

sufficient speed to collect said particulate carrier and captured substance in said longitudinal channel.

5. The method of claim 1, wherein said container is a tube having an inner surface, and said focusing device is a float having an outer surface complementing said inner surface of said tube and having an axial through passage.

6. The method of claim 5, further comprising providing a particulate carrier and mixing said particulate carrier with said sample, wherein said at least one antibody is bound to a surface of said particulate carrier.

7. The method of claim 6, wherein said carrier comprises an effective amount of microbeads having a density greater than a density of white blood cells and wherein said antibody has an affinity for white blood cells.

8. The method of claim 7, wherein said microbeads are made of a synthetic resin.

9. The method of claim 8, wherein said microbeads are made from a polymer selected from the group consisting of polystyrene, polydivinylbenzene and polyvinylchloride.

10. The method of claim 7, wherein said microbeads have a particle size of about 0.05 microns to about 7 microns.

11. The method of claim 7, wherein said microbeads have a density of about 1.00 to about 1.06 g/cc.

12. The method of claim 11, wherein said microbeads have a density of about 1.05 to about 1.06 g/cc.

13. The method of claim 6, wherein said antibody has a binding affinity for said target component, and wherein said focusing device has a density complementing said particulate carrier, whereby said target component accumulates in said passage.

14. The method of claim 13, wherein said carrier comprises microbeads having a particle size of about 4 to about 5 microns and a density of about 1.05 to 1.06 g/cc.

15. The method of claim 6, wherein said antibody has a binding affinity for white blood cells, and wherein said particulate carrier comprises microbeads having a density of at least equal to the density of white blood cells in said sample.

16. The method of claim 15, wherein said microbeads have a density greater than the density of white blood cells.

17. The method of claim 1, wherein said sample material is whole blood and said target component is selected from the group consisting of tumor cells, stem cells and fetal cells.

18. The method of claim 17, wherein said carrier comprises microbeads having a particle size of about 4 microns to about 5

microns, and a density less than the density of white blood cells, and wherein said antibody has an affinity for said tumor cells.

19. A method of harvesting a target component from a sample, said method comprising the steps of:

providing a sample in a sampling tube, said sampling tube containing a float dimensioned to fit within said sampling tube and having a through passage for receiving and elongating layers of blood constituents to be harvested from said sample,

mixing said sample with at least one particulate carrier containing an antibody having a binding affinity for a specific sample constituent,

centrifuging said tube and sample at sufficient G forces to move said float toward one end of said tube and to force a target component from said sample into said through passage, and

removing said target component from said through passage.

20. The method of claim 19, further comprising the step of incubating said sample prior to centrifuging.

21. The method of claim 19, wherein said particulate carrier comprises microbeads having a density of about 1.00 to about 1.06 g/cc.

22. The method of claim 21, wherein said antibody has an affinity for tumor cells.

23. The method of claim 19, wherein said particulate carrier comprises microbeads having a particle size of about 4 microns to about 5 microns.

24. The method of claim 19, wherein said antibody has an affinity for said target component.

25. The method of claim 19, wherein said target component are rare cells.

26. The method of claim 24, further comprising the step of separating said target constituent from said particulate carrier.

27. The method of claim 19, wherein said sample is whole blood and said antibody has an affinity for white blood cells, and wherein said particulate carrier has a density greater than a density of said target component.

28. The method of claim 25, wherein said particulate carrier comprises microbeads having a density equal to or greater than the density of white blood cells.

29. The method of claim 27, wherein said particulate carrier comprises microbeads having a density less than the density of white blood cells.

30. The method of claim 19, wherein said sample is whole blood and said particulate carrier comprises first microbeads having

an antibody with an affinity for tumor cells and second microbeads having an affinity for white blood cells.

31. A method of harvesting a target component from a whole blood sample, said method comprising the steps of:

providing a whole blood sample in a sampling tube, said sampling tube containing a float dimensioned to fit within said sampling tube and having a through passage for receiving and elongating layers of blood constituents to be harvested from said sample,

mixing said sample with an amount of first carrier beads having a coating of a first antibody that has a binding affinity for a target constituent in said sample, and an amount of second carrier beads having a coating of said second antibody that has a binding affinity for white blood cells,

centrifuging said tube and sample at sufficient G forces to move said float toward one end of said tube and to force said first carrier beads and target constituent into said through passage, and

removing said first carrier beads and target constituent from said through passage.

32. The method of claim 31, wherein said first carrier beads have a density of about 1.0 to about 1.06 g/cc.

33. The method of claim 31, wherein said second carrier beads have a density equal to or greater than the density of white blood cells.

34. The method of claim 31, comprising incubating said sample prior to centrifuging.

35. The method of claim 31, wherein said first and second carrier beads have a particle size of about 0.05 microns to about 7 microns.

36. The method of claim 31, wherein said target constituent is selected from the group consisting of tumor cells, stem cells and fetal cells.